

Application No. 10/708,001
Amendment dated April 25, 2006
Reply to Office Action of March 13, 2006

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1 to 25 (Cancelled)

26 (Original) A process for treating a contaminated aqueous solution to remove one or more anionic contaminants therefrom, comprising:

- a. contacting the contaminated aqueous solution with a lignocellulose-based anion-adsorbing medium (LAM), wherein the LAM has been formed by the steps of:
 - i. dissociating cations selected from the group consisting of Fe or Al, from their counterions by adding a chemical compound containing said cations to water and acidifying;
 - ii. pellitizing a lignocellulose having hydroxyl groups (-OH);
 - iii. adsorbing the cations to a lignocellulose having hydroxyl groups (-OH) by bringing the lignocellulose into contact with the solution of step (i) and incubating; and
 - iv. replacing hydrogens (H) of the hydroxyl groups of the lignocellulose with the cations to produce the LAM with a positive charge by exposing the lignocellulose of step (iii) to an alkaline fixing agent; and,
- b. recovering a treated aqueous solution with reduced content of the one or more anionic contaminants.

27 (Original) The method of claim 26, wherein the one or more anionic contaminants is selected from the group consisting of phosphate and arsenic.

28 (Original) The method of claim 26, further comprising regenerating the LAM after its contact with the contaminated aqueous solution by treating the LAM with an alkaline solution to remove the one or more anionic contaminants from the LAM to which said one or more anionic contaminants have been adsorbed, and subsequently neutralizing the LAM with an acid to prepare it for reuse.

29 (Original) The method of claim 26, wherein the lignocellulose is selected from the group consisting of wood, paper, and cotton.

30 (Original) A process for treating a contaminated aqueous solution to remove one or more phosphate anionic contaminants therefrom, comprising:

- a. contacting the contaminated aqueous solution with a lignocellulose-based anion-

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adsorbing medium (LAM), wherein the LAM has been formed by the steps of:

- i. dissociating cations selected from the group consisting of Fe, Al or Ca, from their counterions by adding a chemical compound containing said cations to water and acidifying;
 - ii. pellitizing a lignocellulose having hydroxyl groups (-OH);
 - iii. adsorbing the cations to a lignocellulose having hydroxyl groups (-OH) by bringing the lignocellulose into contact with the solution of step (i) and incubating; and,
 - iv. replacing hydrogens (H) of the hydroxyl groups of the lignocellulose with the cations to produce the LAM with a positive charge by exposing the lignocellulose of step (iii) to an alkaline fixing agent; and
- b. recovering a treated aqueous solution with reduced content of the phosphate anionic contaminants.

31 (Original) The method of claim 30, further comprising regenerating the LAM after its contact with the contaminated aqueous solution by treating the LAM with an alkaline solution to remove the phosphate anionic contaminants from the LAM to which the phosphate anionic contaminants have been absorbed, and subsequently neutralizing the LAM with an acid to prepare it for reuse.

32 (Original) The method of claim 30, wherein the lignocellulose is selected from the group consisting of wood, paper, and cotton.

33 (Original) A process for treating a contaminated aqueous solution to remove one or more arsenic anionic contaminants therefrom, comprising:

- a. contacting the contaminated aqueous solution with a lignocellulose-based anion-adsorbing medium (LAM), wherein the LAM has been formed by the steps of:
 - i. dissociating cations selected from the group consisting of Fe, Al or Ca, from their counterions by adding a chemical compound containing said cations to water and acidifying;
 - ii. pellitizing a lignocellulose having hydroxyl groups (-OH);
 - iii. adsorbing the cations to a lignocellulose having hydroxyl groups (-OH) by bringing the lignocellulose into contact with the solution of step (i) and incubating; and
 - iv. replacing hydrogens (H) of the hydroxyl groups of the lignocellulose with the

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cations to produce the LAM with a positive charge by exposing the lignocellulose of step (iii) to an alkaline fixing agent; and

- b. recovering a treated aqueous solution with reduced content of the arsenic anionic contaminants.

34 (Original) The method of claim 33, further comprising regenerating the LAM after its contact with the contaminated aqueous solution by treating the LAM with an alkaline solution to remove the arsenic anionic contaminants from the LAM to which the arsenic anionic contaminants have been absorbed, and subsequently neutralizing the LAM with an acid to prepare it for reuse.

35 (Original) The method of claim 33, wherein the lignocellulose is selected from the group consisting of wood, paper, and cotton.

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